CHAPTER 22. UTILITIES AND ENERGY CONSERVATION

I. INTRODUCTION

A. SCOPE

This Chapter establishes policy, outlines the responsibilities and procedures for maximizing energy conservation, identifies the processes of procuring and metering utilities, provides procedures for maintaining utility systems, provides guidance on conservation techniques, and provides for use of the Defense Energy Information System II (DEIS II).

B. POLICY

1. A family housing energy conservation program will be established and maintained at each Field Activity.

C. REFERENCES

1. OPNAVINST 4100.8: "Defense Energy Information System (DEIS)"

D. SUMMARY

This Chapter is organized into the three topical areas summarized below:

1. Responsibilities. The Commander, Naval Facilities Engineering Command (COMNAVFACENGCOM), is responsible for providing instructions, guidelines, and resources in support of the family housing utilities and energy conservation program. The primary responsibility of the Engineering Field Divisions (EFD's) is to amplify instructions and provide detailed guidance and assistance as well as to provide supporting funds and monitor Field Activity performance. Field Activities are responsible for planning, programming, budgeting, executing, and accounting for resources in support of the utilities and energy conservation program.

2. Utilities and Energy Conservation. This section covers the management of the utilities provided to the occupants of Government quarters. Methods of utility procurement and allocations are explained along with a discussion of the various means available for the determination of consumption by family housing facilities. The goal of the energy conservation program and methods to reduce utility consumption are also covered in this section.

3. Management Reports. Energy consumption reports contained in the Family Housing Management Information System (FHMIS), DEIS II, and other management information systems are explained in this section.

II. RESPONSIBILITIES

A. THE COMMANDER, NAVAL FACILITIES ENGINEERING COMMAND

COMNAVFACENGCOM is responsible for providing instructions, guidelines, and resources to support the family housing utilities and energy conservation program. In fulfilling this responsibility, COMNAVFACENGCOM will:

1. Ensure the establishment of utilities operation and maintenance standards and promulgation of energy conservation goals.

2. Develop procedures and controls to ensure that sound economic principles, current engineering concepts, and efficient management techniques are applied to the provision and consumption of utilities.

3. Formulate and administer the energy conservation investment program (ECIP) for family housing, verifying payback minimums for each project and the program average for the Department of the Navy.

B. ENGINEERING FIELD DIVISIONS

The primary responsibility of' EFD's is to amplify instructions and provide detailed guidance and assistance to the Field Activities within their purview in support of the family housing utilities and energy conservation program. Specifically, EFD's will:

1. Provide funds in support of the utilities and energy conservation program.

2. Analyze and investigate optional methods for providing utilities.

3. Provide assistance in development and implementation of the energy conservation program.

4. Review and analyze management reports to determine the efficiency of utilities and energy conservation programs.

5. Review and validate Field Activity energy conservation projects and develop ECIP program submissions.

C. FIELD ACTIVITIES

Field Activities are responsible for planning, programming, budgeting, executing, and accounting for resources in support of utilities and energy conservation programs. In fulfilling this responsibility, Field Activities will:

1. Develop, implement, and maintain a continuing energy conservation program for family housing.

2. Inform and continually remind occupants of their energy conservation responsibilities.

3. Validate utilities allocation procedures and applied rates by type of utility.

4. Ensure timeliness and accuracy of data for all family housing utility reports.

5. Develop projects which will reduce consumption of energy in family housing.

III. UTILITIES AND ENERGY CONSERVATION

The goal of the utilities and energy conservation program is to ensure that the essential needs of all occupants are provided without waste. The Field Activity is responsible for providing utilities to occupants of family housing at the lowest total cost to the Government. A conversion from one type of utility service to another will not be made unless substantiated through an analysis of all contributing factors, including economic considerations, and approved by the EFD.

A. ALLOCATION OF UTILITIES

Allocation of utilities to the Family Housing Management Account, Defense (FHMA,D) shall be by type of utility and category of housing for each utility applied. Allocations are based on meter readings or engineering estimates. Methods of determining consumption and applying rates are discussed in the following paragraphs.

1. Meters. The most accurate means of determining utility consumption by occupants of Navy family housing is through individual metering. Where meters exist, they will be the sole determinant of utilities consumption applied to family housing units. At a minimum, master meters will be installed for each family housing project and each type of utility. Pending the installation of permanent meters, temporary meters should be used to periodically monitor utility consumption.

2. Engineering Estimates. In the absence of meters, engineering estimates are used to determine utilities consumption applied to family housing units. When engineering estimates are used, the following considerations pertain:

a. The housing organization must be involved in the development of engineering estimates prior to allocation of utilities to the FHMA,D.

b. Engineering estimates should take into account changes in inventory, excessive vacancies, and the installation of energy saving devices or techniques.

c. They should be validated by periodic use of temporary meters to measure consumption by individual housing units or by housing project areas.

3. Rates. At Navy industrial fund (NIF) activities, the station-stabilized rate as approved by the Navy comptroller is applied to the quantities consumed; the costs derived are lodged against the FHMA,D. At other than NIF activities, the approved station rates are applied to the quantities consumed; the costs derived are lodged against FHMA,D. For familiarization with costs lodged against family housing, the Housing Manager should work closely with the Field Activity comptroller or fiscal officer in the development of rates applied to the FHMA,D. In instances where utilities are provided to mobile home spaces or to units occupied by civilian personnel, the costs for utilities consumed should be paid directly to the utility company or to a special account set up by the Field Activity comptroller or fiscal officer. In no instances should they pass through the FHMA,D.

B. ENERGY CONSERVATION

The goal of the energy conservation program is to ensure that the essential energy needs of all occupants are provided without waste. The success of the program depends primarily upon the participation of individuals along with the development and accomplishment of energy saving techniques. The development of energy conservation programs at the Field Activity level spans both occupant contributions and Field Activity initiatives. Specifically, the Field Activity will establish realistic energy saving goals and implement methods for attaining these goals.

1. Occupant Participation. A program must be developed to gain occupant participation by means of public information campaigns, energy saving tips, and self-help actions designed to conserve energy. A coordinated campaign of signs, stickers, and slogans, including cartoons or catchy phrases, all pointing to the benefits of energy conservation, will often win interest and participation more quickly and more enthusiastically than more conventional methods. The surest method of obtaining occupant participation is to provide conservation incentives and suggested conservation techniques.

a. Conservation Incentives. The Field Activity family housing newsletter should stress the need for energy conservation and suggest various methods to reduce consumption. Recognition of the efforts of individual families or housing areas is an effective way to obtain occupant participation. Each Field Activity should initiate suitable certificates and letters of appreciation for the contributions made by an individual family or the occupants of a specific project to the energy conservation program.

A factual presentation of the energy situation demonstrating the adverse impact on comfort and life style brought about by a shortage of resources is a dramatic way to win the participation of occupants.

b. Conservation Techniques. Suggested conservation techniques which conserve energy without adversely affecting occupant satisfaction are found in the NAVFAC Energy Conservation Handbook. Some of these suggestions are as follows:

(1) Heating.

(a) Set the thermostats no higher than 72 degrees Fahrenheit.

(b) Reduce the thermostat settings to 60 degrees Fahrenheit for nights, short periods of vacancy, and even lower for extended periods of vacancy. The temperature should always be high enough to prevent pipes from freezing.

(c) When the outside temperature is consistently above 60 degrees Fahrenheit, heat should not be used.

(d) Ventilation of units during the heating season should be limited to that which is necessary for the occupants' health. Keep windows closed when heat is on.

(2) Electrical.

(a) Lighting intensities should not be higher than the design standard.

(b) Lights and appliances should be turned off when not in use.

(3) Water.

(a) Water heater temperature setting should be adjusted to a maximum of 140 degrees Fahrenheit if there is a dishwasher, 120 degrees Fahrenheit without one.

(b) Watering of grounds should be permitted only when the water supply is adequate. Care should be exercised to avoid waste resulting from overwatering.

(a) Excessive leaks should be reported.

(4) Air Conditioning.

(a) Keep windows closed when A/C units are being used.

(b) Set the thermostat no lower than 78 degrees Fahrenheit.

(c) Air conditioning should not be used when the outside temperature is consistently below 80 degrees Fahrenheit or when the occupant is away for long periods.

2. Field Activity Participation. Field Activities must develop an aggressive energy conservation program which will educate the occupants. By personally attending civic gatherings, issuing pertinent guidelines and updated information, setting examples, and being available to satisfy the needs and concerns or the occupants, the Housing Manager can impress upon the occupants the need for energy conservation. Many improvements or repairs to the facility will also contribute to the conservation of energy. New energy conserving techniques and devices are being developed constantly, and it behooves the family housing organization to keep abreast of these developments and to request project development, when applicable. Details pertaining to criteria, priorities, and development with respect to repair, ECIP, and improvement projects are contained in Chapter 20 of this Manual. Examples of energy saving projects include the installation of:

a. Ceiling and wall insulation

b. Factory preset thermostats

c. Storm windows and doors

d. Direct spark igniters on gas furnaces

e. Water heater insulating jackets

IV. MANAGEMENT REPORTS

FHMIS provides the Field Activity with information which can be used to analyze the effectiveness of the energy conservation program. The Defense Energy Information System II (DEIS II) is the reporting system conducted by the Defense Logistics Agency (DLA) for the monitoring of consumption within the Department of Defense establishment.

A. FHMIS

The reports produced by the FHMIS pertinent to utilities comprise:

1. Family Housing Operation and Maintenance Management Report

2. General and Flag Officers' Quarters Cost and Utility Consumption Trends Report

3. Comparison of Costs to Zone Averages Report

4. Consumption and Rate by Utility Report

B. DEIS II

DEIS II compares current consumption of utilities with the consumption of utilities during the baseline period at the Field Activity. The quantitive data contained in the DEIS will not be the same as the data contained in the FHMIS. Specific details on DEIS II are contained in OPNAVINST 4100.8.

C. ENERGY AUDIT REPORT

The Energy Audit Report (EAR) is a management tool for use by EFD's and Field Activities in measuring Field Activity progress in meeting Navy energy conservation goals. The EAR provides an energy use per square foot index for family housing by integrating square footage information shown on the Family Housing Property Account with the energy consumption information for each Field Activity reported on the DEIS II. The usefulness of the EAR is dependent upon accurate timely reporting of energy use in DEIS II and the accurate square footage information recorded on the Family Housing Property Account, discussed in Chapter 11 of this Manual. The EFD's should ensure that housing organizations at the Field Activities are provided with a copy of the EAR.

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